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An attempt to ascertain at which three hours of the day the thermometer will give nearly the mean temperature. By Professor Dewey.

A great number of *thermometrical* observations and results have been published. But very little use has been made of them, and, on account of the manner in which the observations have been made, they are likely to prove of little service. So different have been the hours of observation at different places, that only a very uncertain estimate of the relative temperature of places can be made. The advantages to be derived from records of the temperature, can but in small part be realized in the present method. A change seems important. It needs no reflection to be convinced that some hours will give a result much nearer the true mean temperature than others. Though the *true mean* will probably not be ascertained, yet a near approximation may be found by selecting the proper hours. Which hours these are can be determined only by observations. But so far as I can learn, no attempt has been made till the present; and, so great is the task, it will not be often repeated. At the present time the observations are made at very different hours in our country. The following may be mentioned, viz. 7 A. M. and 2 and 9 P. M. at the University of Cambridge, at Williams, Bowdoin, and Middlebury Colleges;—the supposed coldest and warmest times of the day at Yale College;—6 A. M. and 6 P. M. or, sunrise and sunset in many places; 8 A. M. and 1 and 6 P. M. are proposed by the Literary and Philosophical Society of New York. as well as the use of Six's Self-registering Thermometer. The Royal Society, London, seem to make their observations at 8 A. M and 3 P. M. in five colder months, and at 7 A. M and 3 P. M. in seven warmer months. The hours, 7 A. M. and 2 and 9 P. M. have been more extensively adopted probably than any others. The above variety of hours shows the importance of a change. Although it may be doubtful, whether the same *two* or *three* hours would give a mean equally near the *true*, at all places; there cannot be a doubt, it would be nearer the truth than can be obtained in the present method. Can not meteorologists be uniform in their hours of observing the thermometer? Either of the *three* following plans, if they would adopt it, would be preferable to the present. 1. The selection of the *same two or three* hours, or of sunrise and sunset. The object would not be to obtain nearly the mean temperature, but results, from which a comparison of the temparatures at different places might be made. This plan will not, probably, be adopted, because most observers desire to obtain the mean temperature. 2. The use of the Self-registering thermometer, from whose *maxima* and *minima* of temperature a mean near the true would probably be obtained. The ease of making the observations strongly recommends this plan. The liability of this kind of thermometers to need repair, or to be inaccurate, is an objection. 3. The choice of 7 A. M. and 2 and 9 P. M. which appear from the following results to give nearly the true mean. On several accounts this seems to be the best plan.

To get the *mean temperature* of the day, I took observations at the beginning of *each* of the *twenty four* hours, and, assisted by several members of the College, upon whose accuracy and fidelity I could depend, continued the observations for at least *five days* in succession. I give you several of the results. The *first* series
commenced with March 25th, 1816;
the *second* - - - - April 1st;
the *third* - - - July 23d;
the *fourth* - - - Oct. 28th; [five days;
the *fifth* - - - Jan. 23d, 1817; and each continued
and the *sixth* embraces 10 days in Jan. and Feb. 1817.

	Mean of the 24 obs.	Mean of 7 A. M. & 2 & 9 P. M.	Mean of 6 A. M. & 2 & 9 P. M.	Mean of 8 A. M. & 1 & 10 P. M.	Mean of highest & lowest.	Mean of highest & lowest means.	Mean of 6 A. M. & 6 P. M.
First series	39.05	40.01	39.18	39.75	38.86	40.12	38.29
Second	41.75	42.77	41.67	43.27	41.67	42.97	40.28
Third	64.35	65.31	64.23	65.51	65.37	65.11	63.32
Fourth	47.69	48.69	48.65	49.16	48.08	49.98	48.65
Fifth	18.05	18.45	18.68	18.88	17.55	17.81	16.23
Sixth	14.66	15.58	15.63	15.93	14.35	15.28	13.15
Four days in Feb not in the preceding	9.32	10.25			8.07		

The series of observations were more numerous in winter, because it was the opinion of several gentlemen that the results in winter must be different from those in the other seasons. This opinion was very plausible, because the highest and lowest temperature of the day is at different hours in winter and summer. And the reason why the result so nearly agrees with the others is doubtless this, that in winter the temperature at 9 P. M. is several degrees nearer the mean of 7 A. M. and 2 P. M. than at the other seasons. This has been ascertained by Professors Farrar and Cleaveland, and also at this place. As the highest temperature is sometimes between two and three, and sometimes between one and two, had the *highest* been noted, instead of that at the beginning of these hours, the results in the fifth column would have been a little greater, than they are there given. The result of various other hours might be given.

Williams College, Dec. 16, 1817.

Abstract of meteorological observations, taken at Cambridge for December, 1817 *and January* 1818. *By Professor Farrar.*

		Barometer.			Thermometer.		
		7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.
December	G.	30.61	30.60	30.61	45°	52°	55°
	M.	30.023	30.022	30 023	27.29	35.32	29.19
	L.	29.41	29.48	29.19	6	13	8
January	G.	30.51	30.51	30 59	35	48	56
	M.	30.029	30.007	30.018	19.03	28.3	19.0
	L.	29.52	29.52	29.28	—12	1	1

Rain and melted snow in December		4.49 inches.
do.	January	2.76

Whole quantity of snow about one foot.

On the 20th of December, when the thermometer was 15° at Cambridge, it was down to 5° at Lexington, Kentucky; and on the 21st when it was at 16° at Cambridge, it was within a degree of zero at Lexington.

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Abstract of Meteorological Observations, taken at Brunswick. By Professor Cleaveland.

October, 1817.

Mean monthly temp. from three observations each day	45.18°
do. do. do. from maxima of heat and cold	42.80
Greatest heat	67.50
Greatest cold	16.25
Mean height of the Barometer	29.869 in.
Greatest monthly range of do.	1.440
Quantity of rain,	2.550
Days entirely or chiefly fair	20
do. do. do. cloudy	11

Directions of the winds in proportional numbers, viz.

S. W. 15.—N. W. 11.—W. 6.—N. E. 4.—S. 5.—S. E. 3.—N. 1. The prevailing forms of the clouds have been the *cirro-cumuli* and *cumuli*, until near the latter part of the month, when the *cirro-stratus* was predominent.—Thunder on the 12th, and a very little snow on the 28th.

November.

Mean monthly temp. from three observations each day	37.17°
do. do. do. from maxima of heat and cold	35.76
Greatest heat	60.00
Greatest cold	2.25
Mean height of the Barometer	29.870 in.
Greatest monthly range of do.	.920
Quantity of rain, and snow reduced to water	4.800

Days entirely or chiefly fair	18
do do. do. cloudy	12

Directions of the winds in proportional numbers, viz. S. W. 14 —N. W. 12—N. E. 9—W. 4—N. 3—S. 3.

The *Cirro-stratus* has been the predominant form of the clouds, often accompanied with the *Nimbus* or *Stratus.*

ERRATA.—p. 313, read 'to organize the militia and *put* the colony in a state of defence'—p. 317, line 9, for 'resemblance' read 'semblance'—line 3, from the bottom, for 'souls' read 'soul'—p. 323, line 9, for 'name' read 'names'—p. 360, line 32, for 'corrections' read 'correctness'—p. 379, line 11, for 'same' read 'some.'